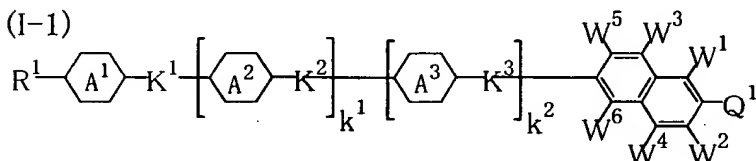


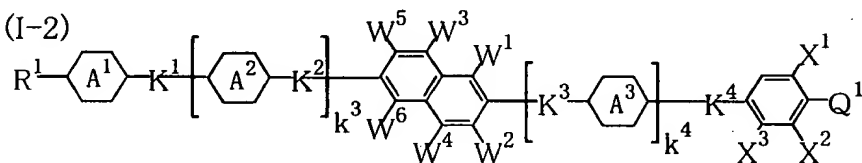
CLAIMS

1. A nematic liquid crystal composition comprising a liquid crystal component A composed of one, or two or more kinds of compounds represented by one, two, or three or more general formulas selected from the general formulas (I-1) to (I-5):

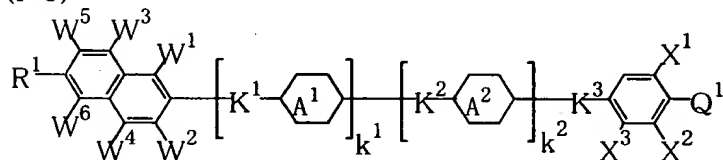
(I-1)



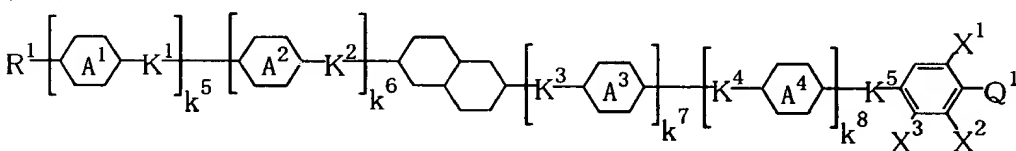
(I-2)



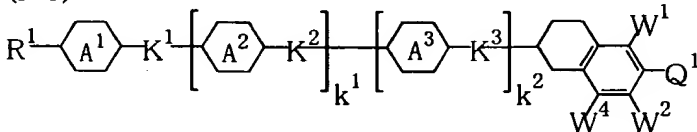
(I-3)



(I-4)



(I-5)



(wherein one, or two or more CH groups, which are present in a naphthalene-2,6-diyl ring, may be substituted with a N group,

one, or two or more $-\text{CH}_2-$ groups, which are present in a decahydronaphthalene-2,6-diyl ring, may be substituted with $-\text{CF}_2-$, one, or two or more $-\text{CH}_2-\text{CH}_2-$ groups, which are present in said ring, may be substituted with -

CH₂O-, -CH=CH-, -CH=CF-, -CF=CF-, -CH=N- or -CF=N-, one, or two or more >CH-CH₂-groups, which are present in said ring, may be substituted with >CH-O-, >C=CH-, >C=CF-, >C=N- or >N-CH₂-, a >CH-CH< group, which is present in the ring, may be substituted with >CH-CF<, >CF-CF< or >C=C<, and at least one C in said non-substituted or substituted ring may be substituted with Si;

R¹ each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN, CH₃ or CF₃ as a non-substituent or substituent group, and one, or two or more CH₂ group, which are present in said alkyl or alkenyl group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Q¹ each independently represents F, Cl, CF₃, OCF₃, OCF₂H, OCFH₂, NCS, or CN;

X¹ to X³ each independently represents H, F, Cl, CF₃, OCF₃, or CN;

W¹ to W⁶ each independently represents H, F, Cl, CF₃, OCF₃, or CN, and also W⁴ each independently represents CH₃;

K¹ to K⁵ each independently represents, a single bond, -COO-, -OCO-, -CH₂O-, -OCH₂-, -CH=CH-, -CF=CF-, -C≡C-, -(CH₂)₂-, -(CH₂)₄-, -CH=CH-(CH₂)₂-, -(CH₂)₂-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-;

rings A¹ to A⁴ each independently represents 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-

phenylene, 2,3-dichloro-1,4-phenylene, 3,5-dichloro-1,4-phenylene, pyrimidine-2,5-diyl, trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene,
 5 naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, and naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl can have one, or two or more F, Cl, CF₃ or CH₃ as a non-substituent or substituent group;

10 one, or two or more hydrogen atoms, which are present in a naphthalene-2,6-diyl ring, a 1,2,3,4-tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene-2,6-diyl ring, a side chain group R¹, a polar group Q¹, linking groups K¹ to K⁵ and rings A¹ to A⁴, may be substituted with a deuterium atom;

15 k¹ to k⁸ each independently represents 0 or 1, k³ + k⁴ is 0 or 1, and k⁵ + k⁶ + k⁷ + k⁸ is 0, 1 or 2; and

atoms, which constitute the compounds of the general formulas (I-1) to (I-5), may be substituted with isotope atoms thereof); 0 to 99.9% by weight of a liquid crystal component B
 20 composed of a compound having a dielectric constant anisotropy of +2 or more as a liquid crystal component excluding the compounds of the general formulas (I-1) to (I-5); and 0 to 85% by weight of a liquid crystal component C composed of a compound having a dielectric constant anisotropy within a
 25 range from -10 to +2; the sum total of said liquid crystal component B and said liquid crystal component C being within a range from 0 to 99.9% by weight.

2. A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component A satisfies at least one of the following conditions:

5 (i) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula ~~(I-1)~~ and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), the content of said selected compounds in said
10 liquid crystal component A being within a range from 5 to 100% by weight;

(ii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of
15 compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(iii) said liquid crystal component A contains one, or
20 two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a
25 range from 5 to 100% by weight;

(iv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented

by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100%
5 by weight;

(v) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general
10 formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(vi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented
15 by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(vii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected
25 compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(viii) said liquid crystal component A contains one, or

two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected
5 compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(ix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of
10 compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(x) said liquid crystal component A contains one, or two
15 or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100%
20 by weight;

(xi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general
25 formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid

crystal component A being within a range from 5 to 100% by weight;

(xii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xiii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xiv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said

liquid crystal component A being within a range from 5 to 100% by weight;

(xv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xvi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xvii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said

liquid crystal component A being within a range from 5 to 100% by weight;

(xviii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xx) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid

crystal component A being within a range from 5 to 100% by weight;

(xxi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxiii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds

selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxiv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxvi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds

represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 10 to 100% by weight;

(xxvii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxviii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxx) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds

represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight; and

(xxxi) said liquid crystal component A contains one, or
 5 two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight.

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 A1
 3. A nematic liquid crystal composition according to claim 1
 or 2, wherein said liquid crystal component A contains one to
 twenty kinds of compounds selected from one, two, or three or
 more sub-groups among the following sub-groups (I-ai) to (I-
 avii), the content of said compounds being within a range from
 15 10 to 100% by weight:

(I-ai) compound in which R^1 is an alkyl or alkenyl group
 having 2 to 7 carbon atoms,

(I-a ii) compound in which Q^1 is F, Cl, CF_3 , OCF_3 , OCF_2 , or CN,

(I-a iii) compound in which K^1 to K^5 represent $-(CH_2)_2-$, $-COO-$,
 20 or $-C\equiv C-$,

(I-a iv) compound in which rings A^1 to A^4 represent trans-1,4-
 cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-
 difluoro-1,4-phenylene, and

(I-a v) compound in which one, or two or more hydrogen atoms,
 25 which are present in naphthalene-2,6-diyl ring, a 1,2,3,4-
 tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene-
 2,6-diyl ring, a side chain group R^1 , a polar group Q^1 , linking

groups K^1 to K^5 and rings A^1 to A^4 , are substituted with deuterium atoms, in the general formulas (I-1) to (I-5); (I-avi) compound in which W^1 to W^3 represent H, F, Cl, CF_3 , or OCF_3 in the general formulas (I-1) to (I-3) and (I-5); and
 5 (I-avii) compound in which X^1 and X^2 represent H, F, Cl, CF_3 , or OCF_3 in the general formulas (I-2) to (I-4).

4. A nematic liquid crystal composition according to any one of claims 1 to 3, wherein said liquid crystal component A
 10 contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (I-bi) to (I-bvii), the content of said compounds being within a range from 5 to 100% by weight:

(I-bi) compound in which $k^1=k^2=0$, the ring A^1 is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K^1 is a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, and

(I-bii) compound in which $k^1=1$, $k^2=0$, rings A^1 and A^2 represent
 15 trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or

decahydronaphthalene-2,6-diyl, K^1 is a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, K^1 and K^2 represent a single

25 bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, in the general formula (I-1) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, and W^1 to W^3 each

represents H, F, Cl, CF₃, or OCF₃;

(I-biii) compound in which $k^3=k^4=0$, the ring A¹ is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, and K¹ and K⁴ represent a single

5 bond, -(CH₂)₂-, -COO-, or -C≡C-, in the general formula (I-2) in which R¹ is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q¹ is F, Cl, CF₃, OCF₃, or CN, X¹ and X² represent H, F, Cl, CF₃, or OCF₃, and W¹ to W³ represent H, F, Cl, CF₃, or OCF₃;

(I-biv) compound in which $k^1=k^2=0$, K³ is a single bond, -COO-,
10 or -C≡C-, and

(I-bv) compound in which $k^1=1$, $k^2=0$, the ring A¹ is 1,4-phenylene, 3-fluoro-1,4-phenylene, or a 3,5-difluoro-1,4-phenylene, K¹ and K³ represent -COO- or -C≡C-, in the general
15 formula (I-3) in which R¹ is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q¹ is F, Cl, CF₃, OCF₃, or C, X¹ and X² represent H, F, Cl, CF₃, or OCF₃, and W¹ to W³ represent H, F, Cl, CF₃, or OCF₃;

(I-bvi) compound in which $k^5=k^6=k^7=k^8=0$, K⁵ is a single bond, -(CH₂)₂-, -(CH₂)₄-, -COO-, or -C≡C-,

20 (I-bvii) compound in which $k^5=1$, $k^6=k^7=k^8=0$, the ring A¹ is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K¹ and K⁵ represent a single bond, -(CH₂)₂-, -COO-, or -C≡C-,

(I-bviii) compound in which $k^7=1$, $k^5=k^6=k^8=0$, the ring A³ is
25 trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K³ and K⁵ represent a single bond, -(CH₂)₂-, -COO-, or -C≡C-, and

(I-bix) compound in which the decahydronaphthalene-2,6-diyl ring has at least one substituent among substituents $-\text{CF}_2-$, $-\text{CH}_2-$

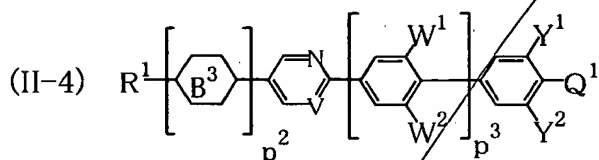
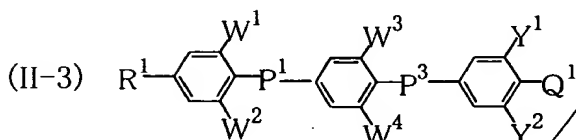
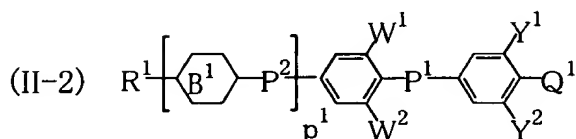
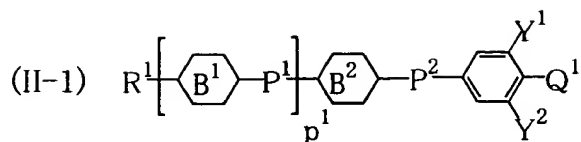
$\text{O}-$, $-\text{CH}=\text{CH}-$, $-\text{CH}=\text{CF}-$, $-\text{CF}=\text{CF}-$, $-\text{CH}=\text{N}-$, $-\text{CF}=\text{N}-$, $>\text{CH}-\text{O}-$, $>\text{C}=\text{CH}-$,

5 $>\text{C}=\text{CF}-$, $>\text{C}=\text{N}-$, $>\text{N}-\text{CH}_2-$, $>\text{CH}-\text{CF}<$, $>\text{CF}-\text{CF}<$, $>\text{C}=\text{C}<$, and Si, in the general formula (I-4) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, and X^1 and X^2 represent H, F, Cl, CF_3 , OCF_3 ; and

(I-bx) compound in which $k^1=k^2=0$, the ring A^1 is trans-1,4-
10 cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K^1 is a single bond, $-(\text{CH}_2)_2-$, $-(\text{CH}_2)_4-$, or $-\text{COO}-$, and
(I-bxi) compound in which $k^1=1$, $k^2=0$, rings A^1 and A^2 represent
15 trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, and K^1 and K^2 each represents a single bond, $-(\text{CH}_2)_2-$, $-(\text{CH}_2)_4-$, or $-\text{COO}-$, in the general
20 formula (I-5) in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q^1 is F, Cl, CF_3 , OCF_3 , or CN, and W^1 and W^2 represent H, F, Cl, CF_3 , or OCF_3 .

5. A nematic liquid crystal composition according to any one
25 of claims 1 to 4, wherein said liquid crystal component B contains one, or two or more kinds of compounds selected from the group of compounds represented by the general formulas

(II-1) to (I-4):



(wherein R¹ each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN, CH₃ or CF₃ as a non-substituent or substituent group, and one, or two or more CH₂ group, which are present in said alkyl or alkenyl group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Q¹ each independently represents F, Cl, CF₃, OCF₃, OCF₂H, OCFH₂, NCS, or CN;

W¹ to W⁴ each independently represents H, F, Cl, CF₃, OCF₃, or CN, and also W⁴ each independently represents CH₃;

Y¹ and Y² each independently represents H, F, Cl, CF₃, OCF₃, or CN;

V represents CH or N;

P^1 to P^3 each independently represents, a single bond, $-\text{COO}-$, $-\text{OCO}-$, $-\text{CH}_2\text{O}-$, $-\text{OCH}_2-$, $-(\text{CH}_2)_2-$, $-(\text{CH}_2)_4-$, $-\text{CH}=\text{CH}-$, $(\text{CH}_2)_2-$, $-(\text{CH}_2)_2-\text{CH}=\text{CH}-$, $-\text{CH}=\text{N}-$, $=\text{CH}=\text{N}-\text{N}=\text{CH}-$, or $-\text{N}(\text{O})=\text{N}-$, and P^1 and P^3 each independently represents $-\text{CH}=\text{CH}-$, $-\text{CF}=\text{CF}-$, or C $\equiv \text{C}-$;

rings B^1 to B^3 each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, or trans-4-sila-1,4-cyclohexylene, and the ring B^3 may also be 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3-dichloro-1,4-phenylene, or 3,5-dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in a side chain group R^1 , a polar group Q^1 , linking groups P^1 to P^3 and rings B^1 to B^3 , may be substituted with a deuterium atom;

p^1 to p^3 each independently represents 0 or 1, and $p^2 + p^3$ is 0 or 1; and

atoms, which constitute the compounds of the general formulas (II-1) to (II-4), may be substituted with isotope atoms thereof).

6. A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-ai) to (II-axii), the content of said compounds being within a range from

10 to 100% by weight:

(II-ai) compounds in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, in the general formulas (II-1) to (II-4);

- 5 (II-aii) compounds in which Q^1 is F, Cl, or $-OCF_3$, in the general formulas (II-1) to (II-4);

(II-aiii) compounds in which P^2 is $-(CH_2)_2-$ or $-(CH_2)_4-$, in the general formula (II-1);

(II-aiv) compound in which p^1 is 1, in the general formula

- 10 (II-1);

(II-av) compound in which at least one of Y^1 , Y^2 , W^1 and W^2 is F, in the general formula (II-2);

(II-avi) compound in which p^1 is 1 and P^1 is $-C\equiv C-$, in the general formula (II-2);

- 15 (II-avii) compound in which P^2 is a single bond or $-(CH_2)_2-$ and P^1 is $-COO-$, in the general formula (II-2);

(II-aviii) compound in which at least one of Y^1 , Y^2 , and W^1 to W^4 is F, in the general formula (II-3);

(II-aix) compound in which P^3 is $-C\equiv C-$, in the general formula

- 20 (II-3);

(II-ax) compound in which P^1 is a single bond or $-C\equiv C-$ and P^3 is $-COO-$, in the general formula (II-3);

(II-axi) compound represented by the general formula (II-4);

and

- 25 (II-axii) compound in which at least one of rings B^1 to B^3 is substituted with a deuterium atom if the rings B^1 to B^3 represent trans-1,4-cyclohexylene, in the general formulas

(II-1), (II-2) and (II-4).

7. A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-bi) to (II-bviii), the content of said compounds being within a range from 10 to 100% by weight:

(II-bi) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, p^1 is 0, and Q^1 is -CN, in the general formula (II-1);

(II-bii) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, p^1 is 1, Q^1 is F or -CN, and Y^1 and Y^2 represent H or F, in the general formula (II-1);

(II-biii) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, p^1 is 0, Q^1 is -CN, and Y^1 , Y^2 , W^1 and W^2 represent H or F, in the general formula (II-2);

(II-biv) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, p^1 is 1, P^2 is a single bond, $-(CH_2)_2-$, or $-COO-$, P^1 is a single bond, $-COO-$, or $-C\equiv C-$, Q^1 is F or -CN, and Y^1 , Y^2 , W^1 and W^2 represent H or F, in the general formula (II-2);

(II-bv) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, and one of P^1 and P^3 is a single bond and other one is a single bond, $-COO-$, or $-C\equiv C-$, in the general formula (II-3);

(II-bvi) compound in which R^1 is an alkyl or alkenyl group

having 2 to 5 carbon atoms, and Y^1 , Y^2 and W^1 to W^4 represent H or F, in the general formula (II-3);

(II-bvii) compound in which R^1 is an alkyl or alkenyl group having 2 to 7 carbon atoms, and $p^2+p^3=0$, in the general formula

5 (II-4); and

(II-bviii) compounds of the general formulas (II-1) to (II-2) in which at least one hydrogen atom of rings B^1 and B^2 is substituted with a deuterium atom if rings B^1 and B^2 represent trans-1,4-cyclohexylene.

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8. A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-ci) to (II-civ),
15 the content of said compounds being within a range from 10 to 100% by weight:

(II-ci) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, p^1 is 1, one of P^1 and P^2 is a single bond and other one is a single bond, $-COO-$, $-(CH_2)_2-$,

20 or $-(CH_2)_4$, Q^1 is F, Cl, CF_3 , OCF_3 , or OCF_2H , and one, or two or more of Y^1 and Y^2 represent F, in the general formula (II-2);

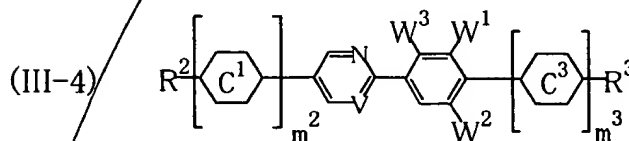
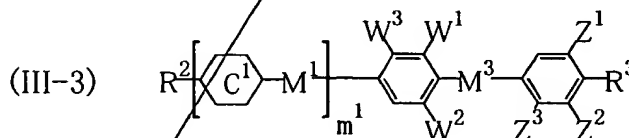
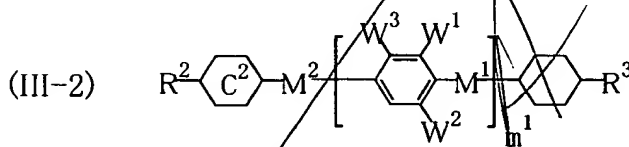
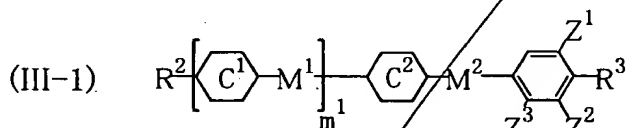
(II-cii) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, p^1 is 1, P^2 is a single bond, $-(CH_2)_2-$, or $-COO-$, P^1 is a single bond, $-COO-$, or $-C\equiv C-$,
25 Q^1 is F, Cl, CF_3 , OCF_3 , or OCF_2H , one, or two or more of Y^1 and Y^2 represent F, and W^1 and W^2 represent H or F, in the general formula (II-2);

(II-ciii) compound in which R^1 is an alkyl or alkenyl group having 2 to 5 carbon atoms, one of P^1 and P^3 is a single bond and the other one is a single bond, $-COO-$, or $-C\equiv C-$, Q^1 is F, Cl, CF_3 , OCF_3 , or OCF_2H , one, or two or more of Y^1 and Y^2

5 represent F, and W^1 to W^4 represent H or at least one of them is F, in the general formula (II-3); and

(II-civ) compound of the general formulas (II-1) and (II-2) in which at least three hydrogen atoms of rings B^1 and B^2 are substituted with a deuterium atom if rings B^1 and B^2 represent trans-1,4-cyclohexylene.

9. A nematic liquid crystal composition according to any one of claims 1 to 8, wherein said liquid crystal component C contains compounds selected from the group of compounds represented by the general formulas (III-1) to (III-4):



(wherein W^1 to W^3 each independently represents H, F, Cl, CF_3 ,

OCF₃, or CN;

V represents CH or N;

R² and R³ each independently represents an alkyl or alkoxy group having 1 to 10 carbon atoms or an alkenyl or alkenyloxy group having 2 to 10 carbon atoms, said alkyl, alkoxy, alkenyl or alkenyloxy group can have one, or two or more F, Cl, CN, CH₃ or CF₃ as a non-substituent or substituent group, and one, or two or more CH₂ group, which are present in said alkyl, alkoxy, alkenyl or alkenyloxy group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Z¹ to Z³ each independently represents H, F, Cl, CF₃, OCF₃, or CN, and Z³ each independently represents -CH₃;

M¹ to M³ each independently represents, a single bond, -COO-, -OCO-, -CH₂O-, -OCH₂-, -(CH₂)₂-, -(CH₂)₄-, -CH=CH-(CH₂)₂-, -(CH₂)₂-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-, and M¹ and M³ each independently represents -CH=CH-, -CF=CF-, or C≡C-;

rings C¹ to C³ each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl can have one, or two or more F, Cl, CF₃ or CH₃ as a non-substituent or substituent group, and rings C¹ and C³ may also be 1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-

difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3-dichloro-1,4-phenylene, or 3,5-dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in side chain groups R^2 and R^3 , linking groups M^1 to M^3 and rings
5 C^1 to C^3 , may be substituted with a deuterium atom;

m^1 to m^3 each independently represents 0 or 1, and $m^2 + m^3$ is 0 or 1; and

atoms, which constitute the compounds of the general formulas (III-1) to (III-4), may be substituted with isotope
10 atoms thereof).

10. A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C satisfies at least one of the following conditions:

15 (i) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

20 (ii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

25 (iii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of

said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(iv) said liquid crystal component C contains one, or two or more kinds of compounds selected from the compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(v) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(vi) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(vii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a

range from 5 to 100% by weight;

(viii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(ix) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(x) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xi) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds

selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

5 (xii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of
10 compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xiii) said liquid crystal component C contains one, or
15 two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general
20 formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xiv) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds
25 represented by the general formula (III-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of

compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

5 (xv) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), one, or two or more kinds of compounds
10 selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight.

15 11. A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (III-ai) to (III-axii), the content of said compounds being within a range from
20 10 to 100% by weight:

(III-ai) compounds in which R^2 is an alkenyl group having 2 to 5 carbon atoms, in the general formulas (III-1) to (III-4);

(III-aii) compounds in which R^3 is a straight-chain alkenyl or
25 alkenyloxy group having 2 to 7 carbon atoms, in the general formula (III-1);

(III-aiii) compounds in which m^1 is 0 and M^2 is a single bond

or $-(CH_2)_2-$, in the general formula (III-1);

(III-aiv) compound in which m^1 is 1, in the general formula (III-1);

(III-av) compound represented by the general formula (III-2);

5 (III-avi) compound in which at least one of Z^1 , Z^2 and W^1 to W^3 is F, in the general formula (III-3);

(III-avii) compound in which Z^3 is F or $-CH_3$, in the general formula (III-3);

10 (III-aviii) compound in which m^1 is 0 and M^3 is a single bond, in the general formula (III-3);

(III-aix) compound in which m^1 is 1, M^1 is a single bond, $-OCO-$, $-CH_2O-$, $-OCH_2-$, $-(CH_2)_2-$, $-(CH_2)_4-$, $-CH=CH-$, $(CH_2)_2-$, $-(CH_2)_2-CH=CH-$, $-CH=N-$, $-CH=N-$, $N=CH-$, $-N(O)=N-$, $-CH=CH-$, or $-CF=CF-$, in the general formula
15 (III-3);

(III-ax) compound in which M^1 is $COO-$ or $-C\equiv C-$ and M^3 is $-OCO-$, $-CH_2O-$, $-OCH_2-$, $-(CH_2)_2-$, $-(CH_2)_4-$, $-CH=CH-$, $(CH_2)_2-$, $-(CH_2)_2-CH=CH-$, $-CH=N-$, $-CH=N-$, $N=CH-$, $-N(O)=N-$, $-CH=CH-$, $-CF=CF-$, or $-C\equiv C-$, in the general
20 formula (III-3);

(III-axi) compound represented by the general formula (III-4);
and

(III-axii) compounds in which at least one hydrogen atom of rings C^1 to C^3 is substituted with a deuterium atom if rings C^1
25 to C^3 represent trans-1,4-cyclohexylene, in the general formulas (III-1) to (III-4).

12. A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (III-bi) to (III-bix), the content of said compounds being within a range from 10 to 100% by weight:

(III-bi) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m^1 is 0, and M^2 is a single bond, $-COO-$, or $-(CH_2)_2$, in the general formula (III-1);

(III-bii) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m^1 is 1, the ring C^1 is trans-1,4-cyclohexylene, and one of M^1 and M^2 is a single bond and other one is a single bond, $-COO-$, or a $-(CH_2)_2-$, in the general formula (III-1);

(III-biii) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, the ring C^2 is trans-1,4-cyclohexylene or trans-1,4-cyclohexenylene, m^1 is 0, and M^2 is a single bond, $-COO-$, or $-(CH_2)_2-$, in the general formula (III-2);

(III-biv) compound in which R^2 is an alkyl group having 1 to 5

carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, the ring C^2 is trans-1,4-cyclohexylene or trans-1,4-

5 cyclohexenylene, m^1 is 1, and one of M^1 and M^2 is a single bond, in the general formula (III-2);

(III-bv) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or
 10 an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m^1 is 0, and M^3 is a single bond, $-C\equiv C-$, or $-CH=N-N=CH-$, in the general formula (III-3);

(III-bvi) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms,
 15 R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m^1 is 1, M^1 is a single bond, $-(CH_2)_2-$, $-COO-$, or $-C\equiv C-$, and M^2 is a single bond, $-COO-$, or $-C\equiv C-$, in the general formula (III-3);

20 (III-bvii) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m^1 is 1, one of M^1 and M^3 is a single bond and other one is a
 25 single bond or $-C\equiv C-$, and at least one of W^1 and W^2 is F, in the general formula (III-3);

(III-bviii) compound in which R^2 is an alkyl group having 1 to

5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, and any one of Z^2 and Z^3 is substituted with F or CH_3 , in the

5 general formula (III-3); and

(III-bix) compound in which R^2 is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R^3 is an alkyl or alkyloxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, and $m^2+m^3=0$, in the general formula (III-4).

Sub 13
13. A nematic liquid crystal composition according to any one of claims 1 to 12, wherein said liquid crystal composition contains one, or two or more kinds of core-structure compounds which have four six-membered rings and a liquid crystal phase-isotropic liquid phase transition temperature of 100°C or higher.

14. A nematic liquid crystal composition according to any one of claims 1 to 13, wherein said liquid crystal composition has a dielectric constant anisotropy within a range from 2 to 40, a birefringent index within a range from 0.02 to 0.40, a nematic phase-isotropic liquid phase transfer temperature within a range from 50 to 180°C or higher, and a crystal phase-, smectic phase- or glass phase-nematic phase transfer temperature within a range from -200 to 0°C.

15. A nematic liquid crystal composition according to any one

of claims 1 to 14, wherein said liquid crystal composition contains a compound having an optically active group capable of securing an induced helical pitch within a range from 0.5 to 1000 μm .

5

16. An active matrix, twisted nematic or super twisted nematic liquid display device using the nematic liquid crystal composition of any one of claims 1 to 15.

10 17. A light scattering type liquid display device comprising a light modulation layer which contains the liquid crystal composition of any one of claims 1 to 15 and a transparent solid substance.

15 18. A light scattering type liquid display device according to claim 17, wherein said liquid crystal composition formed a continuous layer in said light modulation layer and said transparent solid substance formed a uniform three-dimensional network in said continuous layer.

20